

REMARKS

In the Office Action dated November 29, 2006, the Examiner rejected pending claims 1-30. More specifically:

- Claims 1-4, 6-10, 12-18, 20-24 and 26-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,356,864 (Foltz) in view of U.S. Published Application No. 2004/0002994 (Brill) and U.S. Published Application No. 2004/0093567 (Schabes);
- Claims 5, 11 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Foltz in view of Brill and Schabes as applied to claims 1 and 16, and further in view of U.S. Published Application No. 2003/0149692 (Mitchell); and
- Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Foltz in view of Brill and Schabes, as applied to claim 16, and further in view of U.S. Published Application No. 2003/0023642 (Spragins).

Applicants respectfully submit that none of the prior art cited by the Examiner discloses, teaches or suggests the present invention. Therefore, neither independent claim 1 nor 16, as amended, is obvious based upon any of the cited art. More particularly, Applicants submit that the prior art fail to teach or suggest, among other things, “wherein the model includes at least one decision tree to determine a probability associated with a likelihood of the at least one **writing style error**, and wherein the at least one decision tree is generated based on at least one human evaluated essay,” as recited in claims 1 and 16 (emphasis added). Obviousness requires that each and every element of a claim be present in a combination of references, along with a teaching, motivation and suggestion of success in combining them. *See* MPEP 2143.01. In addition, a modification to a reference is not obvious if it changes that reference’s principle of operation. *Id.*

The combination of Foltz and Schabes fail to teach the present invention. The Examiner cites Foltz in his obviousness rejection of independent claims 1 and 16 as disclosing a methodology for analyzing and evaluating a sample text, such as an essay. Specifically, Foltz “analyzes the amount of subject-matter information in the sample text, analyzes the relevance of subject matter information in the sample and evaluates the semantic coherence of the sample.” (see Foltz, Abstract). The method disclosed in Foltz involves the parsing and storing of text objects and text segments from the sample text and determining the degree of similarity between

a sample text and a standard reference text. Next, the Examiner cites Schabes in the obviousness rejection of independent claims 1 and 16 as disclosing a method for displaying an indication of an identified writing style error. Schabes specifically discloses a spell checking system in which a spelling suggestion module suggests corrections for misspelled words. The spelling suggestion module determines a list of replacement words for the identified misspelled word and determines a list of alternate words.

The present invention is directed to automatically evaluating an essay to detect at least one writing style error based on a comparison between feature values of one or more text segments and a model. The model particularly includes a decision tree to determine a probability associated with the likelihood of the at least one writing style error. Both Foltz and Schabes fail to teach the use of a decision tree to determine a probability associated with the likelihood of at least one writing style error. Indeed, neither Foltz nor Schabes discloses the use of a probability associated with the likelihood of a writing style error at all. Rather, Foltz discloses the use of a method for comparing the sample text to the reference text by computing the cosine between a vector representation of the sample text and a vector representation of the standard reference text (see Foltz, Abstract). Alternatively, in Foltz, a dot product can be used to compare the sample text to the standard reference text. *See id.* Schabes discloses the use of a rank associated with each alternative word outputted by a spelling suggestion module (see column 5 paragraphs [0068]-[0069]). Unlike the present invention, Schabes utilizes ranks associated with correct **spelling** alternatives, not with the likelihood of a **writing style** error itself.

Brill is now cited by the Examiner as curing the admitted shortcomings of Foltz and Schabes regarding independent claims 1 and 16. Applicants respectfully disagree with the assertion that Brill renders the present invention obvious. Brill, like Schabes, is directed to automated error correction of user input data based on an automatically generated and filtered database from past user activities (paragraph [0007]). Specifically, Brill determines that an entered word may be related to an intended word with some probability based on the frequency of such discrepancies in input logs. Brill then can provide or suggest a potential correct formulation of the relevant word, as with Schabes. In essence then, Brill is a **spelling** corrector like Schabes, and is not directed to **writing style** errors as is the present invention. In contrast, the decision tree of the present invention is directed to detecting a writing style error, e.g. correlating the use of a text segment or word in the essay to overly repetitive text segment or

word use. See for example paragraph [0052] of the published version of the present invention (U.S. Patent Application Publication 2004/0194036), corresponding to paragraph [0044] page 16 of the as-filed application.

Because claim 1 and 16 are patentable, claims 2-15 and 17-30 are patentable as dependent from patentable base claims. See MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Reconsideration of those claims is also respectfully requested. Accordingly, Applicants respectfully request that the Examiner withdraw the 35 U.S.C. § 103 rejections.

Regarding dependent claim 5, Applicants note that Mitchell extracts nouns, verbs, modifiers, prepositions, adjectives, and adverbs for example, and then submits data representations of such constituent parts of each student answer to semantic analysis. See for example paragraphs [0026] and [0048]-[0054] of Mitchell. Mitchell not only fails to teach or suggest but actually teaches away from **not** considering the function words of the essay, as taught and claimed in the present invention. In paragraph [0031] of the published version of the present invention (U.S. Patent Application Publication 2004/0194036), corresponding to paragraph [0030] on page 9 of the as-filed application, the inventors state “Prior to generating the vector files, function words such as prepositions, articles, and auxiliary verbs, may be **removed**. For example, the function words (the, that, what, a, an, and, not) have been empirically found to increase the complexity of the analysis without contributing to the reliability of the result.” (emphasis added). The Examiner’s assertion that in Mitchell “certain words of the essay are not considered by the assessment tool since they are altered to the reduced variant form” is not entirely correct; such words are converted to the reduced variant form specifically so they **can** indeed be considered by Mitchell, in contrast to the present invention which intentionally does **not** consider them.

Regarding dependent claims 11 and 25, Applicants assert that Mitchell does not process pronouns (vs. general nouns, which are distinct from pronouns) at all, as taught and claimed by the present invention. Applicants also note that specific portions of Mitchell supporting the rejections of claims 5, 11, and 25 are not cited by the Examiner, and invite clarification.

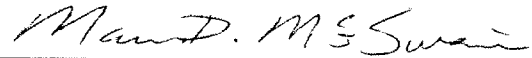
Claim 19 is canceled in this response, to advance prosecution.

CONCLUSION

In view of the remarks set forth above, Applicants respectfully submit that the application and the claims are in condition for allowance and respectfully request favorable consideration and the timely allowance of all pending claims. Applicants respectfully submit that the above amendments have not added any new matter to the application.

The Commissioner is hereby authorized to charge any additional fees (or credit any overpayment) associated with this communication to our Deposit Account No. 13-0019. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such extension is requested and should also be charged to our Deposit Account.

Respectfully submitted,



Marc D. McSwain

Registration No. 44,929

CUSTOMER NUMBER 26565

MAYER BROWN LLP

P.O. Box 2828

Chicago, IL 60690-2828

Telephone: (312) 701-8286

Facsimile: (312) 706-9000